

Abstract

The present invention provides non-woven laminate that is not subjected to final consolidation by a binder and the production thereof. The laminate includes at least one non-woven mat containing glass staple fibers pre-consolidated with a resin, and at least one non-woven layer of synthetic fibers. The synthetic non-woven layers and the pre-consolidated non-woven mat of glass fibers are bounded together by needling such that a portion of the fibers of the upper synthetic non-woven layer passes through the non-woven mat of glass fibers possibly through the underlying synthetic non-woven layer. The synthetic fibers are heat shrunken and the laminate is binder free.

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